REMARKS

Reconsideration is respectfully requested.

Claims 1-32 are pending. .

Claims 1-32 stand rejected under 35 U.S.C. 102(b) as being anticipated by Lavery et al. (WO 0037258).

As presently claimed, one embodiment of the invention relates to a print head comprising:

an orifice plate comprising at least two orifices;

wherein at least one orifice prints a first reactive ink;

wherein at least one other orifice prints a fixer or a second reactive ink;

wherein the first reactive ink and the fixer or second reactive ink react to form a solid precipitate; and

wherein the solid precipitate is redispersible in at least one of the fixer or the first reactive ink, or the second reactive ink.

As presently claimed, another embodiment relates to:

an orifice plate for a print head, the orifice plate comprising:

at least two orifices;

wherein at least one orifice prints a ink;

wherein the second orifice prints at least one of a fixing agent or a second ink;

wherein the ink and the at least one of the fixing agent or the second ink react to form a precipitate; and

wherein the precipitate is redispersible in at least one of the first ink or the at least one of the fixing agent or the second ink.

As presently claimed, yet another embodiment relates to:

a method for marking a medium, the method comprising:

printing at least one of a fixer or first reactive ink onto the medium; and

printing a second reactive ink onto the medium;

wherein the at least one of the fixer or first reactive ink and the second reactive ink react to deposit a precipitate onto the medium;

wherein the precipitate is redispersible in at least one of the at least one of the fixer or first reactive ink or the second reactive ink; and

wherein the second reactive ink and the at least one of the fixer and the first reactive ink are printed from the same orifice plate.

As presently claimed, still yet another embodiment relates to:

a means for marking a substrate, the means comprising:

a means for depositing a colorant onto the substrate; and

a means for depositing a fixing agent onto the substrate;

wherein the colorant and the fixing agent are deposited through the same orifice plate;

wherein the colorant and the fixing agent react to mark the substrate with a precipitate; and

wherein the precipitate is redispersible in at least one of the colorant or the fixing agent.

The reference cited in the above § 102 rejection does not teach an orifice plate comprising at least two orifices wherein at least one orifice prints a first reactive ink and a second orifice prints a fixer or a second reactive ink; nor does it teach that the orifice plate comprises at least two arrays of orifices wherein one array prints the reactive ink and another array prints the fixer or the second reactive ink. Instead the cited reference relates to an ink and a polymeric biguanide fixer in separate fixer pens.

The examiner's attention is directed to page 5, lines 36-37 continuing to page 6, lines 1-2 which states as follows: "Thus the printer may be of the 'five pen' type in which yellow, magenta, cyan and black are applied by four pens and the composition is applied by a fifth pen. A suitable ink jet printer and a method for its control is described in EP 657 849."

In inkjet jargon, the term "pen" is synonymous with an inkjet printhead. Thus the statement in Lavery that the four ink colors are applied by four separate pens and the biguanide composition by a fifth pen points up the fact that Lavery never described or suggested that the biguanide composition be applied by a second orifice on the same orifice plate with an ink.

To further support the above point, the examiner is directed to EP 657 849, which is an EP application published in German. In the U.S. equivalent of EP 657 849, U.S. Patent No.5,635,969 (Allen), Figure 1 shows the structure referred to above in Lavery of the four inks and one non-ink fluid being applied to a medium by four separate printheads for the ink and one printhead for the non-ink fluid all lined up together above the medium. Clearly the printheads are not sharing the same orifice plate, and specifically an ink and a non-ink fluid such as a biguanide fixer are not being applied from the same orifice plate. Neither is there anything shown about an orifice plate sharing at least two arrays of orifices.

Applicants respectfully submit that the description on page 5, lines 36-37 and page 6, lines 1-2 of Lavery is the arrangement of inkjet printer orifices which is intended by Lavery. The reference to EP 657 849 by Lavery provides even more evidence of what was being described by Lavery

The examiner cites Lavery, page 11, lines 5-10 and page 14, lines 25-30 to prove the point that Lavery is describing an orifice plate comprising at least two orifices.

Applicants respectfully submit that page 11, lines 5-13 is a standard generic description used to describe how an inkjet pen works Although it would be possible to apply the system of Lavery in an inkjet printer having an orifice plate with more than one orifice, that is not being taught or suggested in Lavery.

With page 14, lines 25-30, there is a description of an ink jet printer cartridge comprising a plurality of chambers and a set of liquids. The liquids can be either ink or other composition such as biguanide fixer. The description mentions nothing about having more than one orifice on the same orifice plate and by no means mentions the possibility of having both a fixer orifice and an ink orifice on the same orifice plate. Clearly an inkjet cartridge with more than one liquid chamber may have one orifice for each chamber and each chamber may also have its own orifice plate, which is consistent with the description in Lavery, page 5, lines 36-37 and page 6, lines 1-2, discussed above. Although it would be possible to apply the system of Lavery in an inkjet printer having an orifice plate with more than one orifice, that is not being taught or suggested in Lavery.

The examples of Lavery provide a further compelling reason why Lavery would not teach an orifice plate comprising at least two orifices. When ink and fixer are applied from the same orifice plate, there is severe problem with precipitation which leads to nozzle clogging and cleanliness issues. In Example 5, for example, the inks used are the carboxylated Pro-Jet dyes Fast yellow 2, Fast Magenta 2, Cyan 2 and Fast Black 2. Since these inks are carboxylated, both the low pH nature of fixers and the cationic charges on the fixers will cause precipitation of the dyes. As the present inventors have found, only by carefully selecting the inks can such a system work. Clearly, Lavery was not selecting inks that would work in a same orifice plate system. Therefore, one skilled in the art reading Lavery would not read Lavery as teaching a system with more than one orifice on a single orifice plate. Nor would such a person read Lavery to mean that the orifice plate comprises at

least two arrays of orifices wherein one array prints the reactive ink and another array prints the fixer or the second reactive ink.

As the Examiner is aware, in order to maintain a rejection under 35 U.S.C. 102, each and every element must be present in the cited reference. In the case of Lavery, the reference does not teach the system of applying both an ink and a fixer through separate orifices on a single orifice plate nor does it teach that the orifice plate comprises at least two arrays of orifices wherein one array prints the reactive ink and another array prints the fixer or the second reactive ink. Therefore, Applicants submit that the rejected claims under 102(b) are not anticipated by the cited references. Withdrawal of this rejection is respectfully requested.

In view of the above arguments, the applicants respectfully request that the above rejections be withdrawn.

Respectfully submitted,

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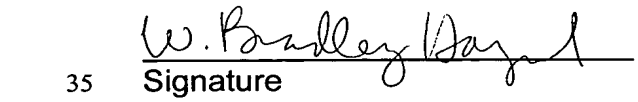

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